

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:	Luskin et. al	)	
Serial No:	10/735,382	)	Appeal No.
Confirmation No:	1704	)	
Filed:	12/12/2003	)	
For:	Enhanced Vehicle Event Information	)	
Examiner	Eric M. Gibson	)	

The Honorable Commissioner of Patents  
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**BRIEF OF APPELLANT**

The Applicant has filed a timely Notice of Appeal from the action of the Examiner in finally rejecting all of the claims that were considered in this application. This Brief is being filed under the provisions of 37 C.F.R. § 1.192. The Filing Fee, as set forth in 37 C.F.R. § 1.17(c), is submitted herewith.

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### **REAL PARTY IN INTEREST**

The real party in interest is Microsoft Corporation, by way of assignment from Lusk et. al, who is the named inventive entity and is captioned in the present brief.

## **RELATED APPEALS AND INTERFERENCES**

None.

### STATUS OF CLAIMS

Allowed Claims: No claims have been allowed

Cancelled Claims: No claims have been cancelled

Pending Claims: Claims 1-48 are pending in the application and stand finally rejected by the Examiner

Appealed claims: All of the pending claims are subject to this appeal.

### STATUS OF AMENDMENTS

A Final Office Action was issued April 20, 2006 finally rejecting pending claims 1-48 under 35 U.S.C. §103.

A Response to the Final Office Action was filed June 19, 2006. No claims were amended in this Response.

An Advisory Action maintaining the rejection was issued on July 25, 2006.

A Notice of Appeal was timely filed on August 25, 2006 in response to the Advisory Action and the Final Office Action.

## SUMMARY OF THE CLAIMED SUBJECT MATTER

A vehicle based event information system is described. A vehicle based computer receives a diagnostic code and generates an associated explanation of the code. The explanation may combine data collected from a plurality of systems of the vehicle, such that the explanation is presented in understandable format via the vehicle based computer.

Following is a brief summary of independent claims 1, 12, 23, 33 and 43 with exemplary references to the disclosure inserted for convenience. References should not be understood as limiting any feature to the recited portions of the disclosure.

**Claim 1** recites a method comprising: collecting, on a computer maintained within a vehicle (300), data from a plurality of systems of the vehicle (302), wherein the plurality of systems include a diagnostics system (306) providing one or more diagnostic codes; and each is connected to the computer by a respective interface (312, 314, 316 320); and generating, on the computer, an explanation (328) of a vehicle condition based on at least one said vehicle diagnostics code comprising a set of symbols, wherein the explanation combines data collected from the diagnostic system with data collected from at least one other system. (FIG. 4, p.16-17).

**Claim 12** recites a computer-readable medium having stored thereon a computer program having executable instructions for performing a process comprising: collecting, on a computer maintained within a vehicle (300), data

from a plurality of systems of the vehicle (302); wherein the plurality of systems includes: a diagnostics system (306) providing one or more diagnostic codes; and a global positioning satellite (GPS) system (308) providing vehicle location data; and generating a deciphered explanation of at least one said vehicle diagnostics code (328), wherein the explanation combines data collected from the diagnostics system with vehicle location data collected from the GPS system. (FIG. 4, p.16-17).

**Claim 23** recites a vehicle comprising: a vehicle diagnostic system (306); one or more other vehicle systems (308, 310, 318); and a computer communicatively coupled to the vehicle diagnostic system and the one or more other systems via respective interfaces, wherein the computer is configured to: collect data from a plurality of said vehicle systems (302); and generate a deciphered explanation (328) of a vehicle diagnostics code.

**Claim 33** recites a vehicle-based system comprising: a diagnostics receiver module (312) receiving a vehicle diagnostics code (330) from a vehicle diagnostics system (302), the vehicle diagnostics code including a set of one or more symbols and corresponding to a vehicle condition; one or more interfaces corresponding to one or more other vehicle systems (314, 316, 320) and configured to receive vehicle systems data (332,334,336) from a respective vehicle system; and means for generating an explanation (328) of the vehicle condition based on the vehicle diagnostics code, wherein the explanation



combines data received from the vehicle diagnostics system and at least one said other vehicle system. (FIG. 4, p.16-17).

**Claim 43** recites a method comprising: receiving, on a vehicle based computer (300), a vehicle diagnostics code (330) from a vehicle diagnostics system (306), the vehicle diagnostics code including a set of one or more symbols and corresponding to a vehicle condition; receiving vehicle systems data (332,334) from one or more other vehicle systems (308,310); and retrieving an explanation of the vehicle condition (328) based on the vehicle diagnostics code; wherein the explanation combines data from the vehicle diagnostics system and at least one said other vehicle system. (FIG. 4, p.16-17).

## GROUND OF REJECTION TO BE REVIEWED ON APPEAL

1. Claims 1, 2, 4, 7-13, 15, 18-24, 26, 29, 31-38, 40 and 43-48 are rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 5,491,631 to Shirane et al. (hereinafter "Shirane") in view of U.S. Patent No. 6,370,454 to Moore (hereinafter "Moore").

2. Claims 3, 14, 25 and 41 are rejected 35 U.S.C. §103(a) as being unpatentable over Shirane in view of U.S. Patent No. 6,212,449 to Wellman et al. (hereinafter "Wellman").

3. Claims 30 and 39 are rejected 35 U.S.C. §103(a) as being unpatentable over Shirane in view of U.S. Patent No. 6,278,919 to Hwang et al. (hereinafter "Hwang").

## ARGUMENT

1. **FIRST GROUND OF REJECTION:** Claims 1, 2, 4, 7-13, 15, 18-24, 26, 29, 31-38, 40 and 43-48 meet the requirements of 35 U.S.C. §103(a) and are therefore allowable over U.S. Patent No. 5,491,631 to Shirane et al. (hereinafter "Shirane") in view of U.S. Patent No. 6,370,454 to Moore (hereinafter "Moore").

Shirane describes a "Fault diagnostic system for vehicles using identification and program codes". *Shirane, Title*. A memory stores a vehicle identifier code which enables identification of a vehicle carrying the same type of electronic control unit (ECU) correspondingly to an ECU identification code (ECU-ID) and display means for displaying the vehicle identifier code is displayed on the basis of the ECU-ID provided by an ECU, and a predetermined fault diagnostic program corresponding to the vehicle identifier code is selected and initiated in response to the input of a verification signal of the displayed vehicle identifier code. When a plurality of faulty parts of a vehicle are detected, a priority table is referred to and fault codes corresponding to the plurality of faulty parts are displayed with priority. *Shirane, Abstract*.

Moore describes "a method and apparatus for the maintenance of mechanized equipment such as an automobile is disclosed. Various sensors located within the automobile provide information to an on-board computing device, a personal digital assistant, or a local computing device which are networkable to a network such as the Internet. The information may be transferred across the network, and service obtained appropriately. Information located in various remote servers relating to the performance and service of the vehicle may be downloaded across the network and easily used in servicing and maintaining

the vehicle. Optionally, the apparatus includes a notification system, such as an email system, for notifying of, scheduling, and/or paying for services.” *Moore*.  
*Abstract*.

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. *In re Vaack*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991); MPEP § 2142. Applicant submits that (1) the proposed combination of references fails to teach or suggest all the features of the Applicant’s claimed invention, and (2) motivation for the proposed combination is lacking.

For the sake of brevity, arguments will first be made with reference to claim 1 followed by brief discussion of the applicability of those arguments with respect to the other claims of the application.

**1a. A *prima facie* case of obviousness has not been established because the combination of Shirane and Moore fails to teach or suggest all the recited features of the applicant’s claims.**

For example:

**Claim 1** recites a method comprising:

- collecting, on a computer maintained within a vehicle, data from a plurality of systems of the vehicle, wherein the plurality of systems:

- include a diagnostics system providing one or more diagnostic codes; and
- each is connected to the computer by a respective interface; and
- generating, on the computer, an explanation of a vehicle condition based on at least one said vehicle diagnostics code comprising a set of symbols, wherein the explanation combines data collected from the diagnostic system with data collected from at least one other said system .

(i) Shirane and Moore, alone or in combination, fail to teach or suggest “generating, on the computer, an explanation of a vehicle condition” wherein the computer is “maintained within a vehicle” as recited in claim 1. Examiner on p. 2 of the *Office Action dated 4/20/2006* correctly concludes that “Shirane does not teach that the computer is maintained on the vehicle, or combining data collected from the vehicle with diagnostics data” as recited in claim 1. The Examiner relies upon Moore for these recited features.

With respect to a computer maintained with in a vehicle, claim 1 recites “collecting, on a computer maintained within a vehicle . . . and generating, on the computer, an explanation of a vehicle condition” Examiner acknowledges that Shirane fails to disclose a vehicle maintained computer. Shirane describes a portable fault diagnostic system which is external to a vehicle and thus fails to provide a basis for the above recited features of claim 1.

Moore does not correct the acknowledged defects in Shirane. In fact, Moore does not describe generating an explanation at all, let alone an explanation of a vehicle diagnostics code. Examiner indicates that “Moore further teaches that a diagnostic system may be implemented on-board the vehicle, as a portable device, and off-board the vehicle (column 8)”. *Office Action p. 3.* Applicant disagrees. The description in column 8 relied upon by the examiner describes a

system in which a computing device external to the vehicle is employed to process the sensor data of Moore. Assuming for the sake of argument only that Moore describe collecting sensor data on a vehicle, Moore is still silent on a computer maintained within a vehicle, which performs the functions recited in claim 1.

Referring to column 8 of Moore which the Examiner relies upon, a description of FIG. 1 is provided which shows a PDA 107 and a local computer 108 which are clearly external to the vehicle 100. Moore describes utilizing these external devices for data acquisition from sensors of the vehicle via the system of FIG. 1, in particular via a data port 102 or wireless link 104. *Moore, col. 8, line 21 to col. 9 line 6*. While Moore, describes a vehicle system for collection of sensor data, there is no indication in Moore at column 8 or elsewhere for a vehicle based computer at all, let alone a "a computer maintained within a vehicle" and "generating, on the computer, an explanation of a vehicle condition" as recited in claim 1. Moore is silent as to data acquisition and/or processing of the sensor data by a vehicle based computer. Merely collecting sensor data of a vehicle as in Moore, does not provide a basis for an explanation generated on a vehicle based computer. Thus, Shirane and Moore alone or in combination fail to teach or suggest "generating, on the computer, an explanation of a vehicle" wherein the computer is "maintained within a vehicle". The references of record simply fail to teach these features of claim 1. For a least these reasons a *prima facie* case of obviousness has not been established, and therefore claim 1 is allowable over Shirane and Moore, alone or in combination.

(ii) Shirane and Moore, alone or in combination, fail to teach or suggest for "generating, on the computer, an explanation of a vehicle condition . . . wherein

the explanation combines data collected from the diagnostic system with data collected from at least one other said system” as recited in claim 1.

Again, Examiner acknowledges that Shirane fails to disclose “combining data collected from the vehicle with diagnostics data”. *Office Action p. 2.* Moore fails to correct these acknowledged defects in Shirane. Moore fails to teach or suggest combining data from systems and certainly does not teach or suggest generating an explanation that combines data from a diagnostic system and other systems of the vehicle.

Moore does describe collecting sensor data from vehicle systems. Moore describes these sensors as including “pressure sensors, temperature sensors, viscosity sensors, flow sensors, chemical sensors such as oxygen, CO.sub.2, CO, NO, NO.sub.2, uncombusted hydrocarbons, sulfur and other sensors which detect various chemical substances.” *Moore, col. 4, lines 52-57.* Moore does not mention a diagnostic system or collecting of diagnostic codes from a diagnostic system at all. Even if Moore provides a basis for combining data from the various sensors of different systems, it still fails to teach or suggest combining sensor data with diagnostic data. Further, Moore fails to describe generating an explanation based on the combined data. Thus, Shirane and Moore, alone or in combination, fail to teach or suggest an explanation based on diagnostic code that combines data from the diagnostic system with data from one or more other vehicle systems. The combination simply fails to teach these aspects of claim 1.

While Moore describes collecting sensor data from a variety of vehicle systems, it is not clear from Moore that the sensor data from different systems is ever combined. The Examiner referring to column 7 makes a conclusory statement that “Moore teaches the benefit of associating data collected on the

various systems with diagnostic data for purpose of assisting in repair of the vehicle". *Office Action* p. 3. Respectfully, it was asserted in the Response filed 6/19/2006 that the Applicant does not find such a statement in column 7 and it is unclear what in particular the Examiner is relying upon for the asserted proposition. *Response dated 6/19/2006, p. 15*. Respectfully, the Examiner has failed in the Advisory Action or elsewhere to provide any explanation of the asserted proposition. In fact, column 7 does describe:

In a preferred embodiment of the invention, each sensor is included in a group of sensors which give information relating to a single onboard system of the equipment or vehicle. This group of sensors may be an electronic grouping, not necessarily a physical grouping, thus allowing sensors which help diagnose one system also to serve double duty when querying another, related system.

For example, if the tailpipe sensor is detecting an overheated tailpipe or an excess of uncombusted hydrocarbon emissions, the control software may poll the ignition module to make sure each spark plug is firing, and check the timing thereof. If the vehicle stalls, the software can query the fuel line sensor or access historical data relating to the fuel flow sensor to see if the flow of fuel has been interrupted, or if the engine oil pressure has been low recently. *Moore col. 7, lines 27-42*.

Thus, Moore describes each sensor in a group associated with "a single onboard system". Moore also describe using certain sensors to collect data from more than one system e.g. "to serve double duty". Further, the control software may collect data from another system in response to data from a sensor of a first system, e.g. collect ignition data if tailpipe is overheated. What Moore fails to describe is that the data from separate systems is combined or that a vehicle condition or diagnostic code explanation is generated which combines data from



multiple systems. More particularly, there is no basis in Moore for an explanation which combines data from vehicle systems with diagnostic data from a diagnostic system. Moore is silent on this aspect of the present claims. There is nothing in column 7 or elsewhere in Moore that describes “generating . . . an explanation of a vehicle condition based on at least one said vehicle diagnostics code . . . wherein the explanation combines data collected from the diagnostic system with data collected from at least one other said system” as recited in claim 1. Even if the portion of Moore relied upon is construed as indicating that data from the sensors may be “associated” as the Examiner suggests “associating data” from systems is not equivalent to **generating an explanation of a vehicle code or vehicle condition** which combines data from a plurality of vehicle systems.

Assuming for the sake of argument only that Shirane describes an explanation based on a diagnostic code and that Moore describes associating sensor data from numerous systems, the combination of Shirane and Moore does not provide a basis for **an explanation of a vehicle code or condition based on combined data**. Neither Moore nor Shirane describes an explanation of a vehicle condition generated from combined data. Thus, the combination fails to teach or suggest all the recited features of claim 1. Accordingly, claim 1 is allowable over Shirane and Moore, alone or in combination, for at least this reason.

(1b.) **In addition, the combination of Shirane and Moore lacks proper motivation to combine.**

(i) The examiner has failed to provide a convincing line of reasoning as to why one of ordinary skill in the art would combine the references in the required manner.

As noted above, the Examiner referring to column 7 makes a conclusory statement that "Moore teaches the benefit of associating data collected on the various systems with diagnostic data for purpose of assisting in repair of the vehicle". *Office Action p. 3*. Further, the examiner referring to column 8 indicates that "Moore further teaches that a diagnostic system may be implemented on-board the vehicle". These statements are cited by the examiner as the basis of the motivation to combine the references in the proposed manner. In particular, the Examiner asserts "It would have been obvious to one of ordinary skill in the art to collect data on board a vehicle, where it is generated, as illustrated in the system taught by Moore, and further to associate data from systems collected on the vehicle with diagnostics data as also illustrated by Moore, in order to assist with the repair of the vehicle through analysis of historical data." *Office Action p. 3*.

Assuming for the sake of argument only that the statements of the Examiner are accurate, the collecting data on a vehicle and associating the data with diagnostics data does not sufficiently provide motivation to combine the references in the manner required to produce the invention as claimed. For instance, the Examiner offers no motivation for "generating, on the computer, an explanation of a vehicle condition" wherein the computer is "maintained within a vehicle" as recited in claim 1. Thus, the proposed motivation is insufficient for at least this reason

In any event the statements used for the proposed motivation are inaccurate. As noted above, column 8 describes a system in which external devices (PDA 107, compute 108) are used to process sensor data from a vehicle. While sensor data is collected at a vehicle, Moore essentially described a diagnostic system located external to the vehicle, which is contrary to the examiner's proposed basis for

motivation. Further there is no basis in Moore for the examiner's proposition that Moore teaches "the benefit of associating data collected on the various systems with diagnostic data for purpose of assisting in repair of the vehicle. Column 7 cited by the examiner does not contain such a statement. Moore fails to describe that the data from separate systems is combined or that a vehicle condition or diagnostic code explanation is generated which combines data from multiple systems. In particular, there is no basis in Moore for an explanation which combines data from vehicle systems with diagnostic data from a diagnostic system. Moore is silent on this aspect of the present claims. As previously noted, respectfully, the Examiner has not responded to Applicant's previous arguments in reference to this point. The Examiner's proposed motivation is based on inaccurate reasoning. Thus, motivation to combine is lacking at least because the examiner has failed to provide a convincing line of reasoning as to why one of ordinary skill in the art would combine the references in the required manner.

(ii) There is insufficient motivation to combine because the proposed combination of Shirane and Moore would render one or more of the references unfit for their intended purposes and/or change a principle of operation of one or more of the references. Motivation to combine is lacking where a modification proposed by the Office renders a reference unsatisfactory for its intended purpose. Further, motivation to combine is lacking if the modification proposed by the Office changes a principle of operation of a reference. *See, MPEP §2143.01.*

Both Shirane and Moore are directed at systems which utilize computers which are external to the vehicle. Both Shirane and Moore are silent on a vehicle based computer which performs the functions of the computer recited in claim 1. Applicant asserts that both Shirane and Moore are limited by there disclosures to

systems in which external computing devices are used to analyze vehicle related data.

Shirane is directed to a fault system external to a vehicle, and operable with many different vehicles. Accordingly, Shirane may not be combined to produce a vehicle based fault diagnostic system. Such a system is contrary to the teachings of Shirane and would render Shirane unfit for its intended purpose and/or alter the principle of operation of Shirane. As previously noted, the Examiner on page 2 of the Office Action correctly concludes that "Shirane does not teach that the computer is maintained on the vehicle". Applicant agrees and submits that Shirane is limited by its disclosure to a fault diagnostic system which is portable and/or external to the vehicle.

For instance, Shirane describes an ECU component (*Ref No. 1 in FIG. 2*) having an ECU-ID and a vehicle identification number (VIN). A separate fault diagnostic system (*Ref. No. 2 in FIG. 2*) is used to retrieve fault data from the ECU. The ECU-ID or VIN number is used by the diagnostic system to select from among many diagnostic programs, e.g. programs corresponding to different VINs and vehicles. Applicant understands this to mean the ECU is within a specific vehicle and **that the fault diagnostics system is separate from the vehicle and is designed used with many vehicles.** The following excerpted portion of Shirane further illustrates that the diagnostic system is not maintained within a vehicle, rather is directed to a device for use with many vehicles:

The signal taken in from ECU 1 through cable 5 and the signal obtained at test probe 6 are processed on the program and/or control data stored in ROM 21 and RAM 22, and the processing result or fault diagnostic result is output to display device 27. **To provide for optimal fault diagnosis for**

**many types of vehicles, a plurality of fault diagnostic programs are previously prepared and registered in ROM 21. Shirane col. 8, lines 36-44.**

More directly, Shirane states that the fault diagnostic system is designed so as to be a portable device:

**Preferably fault diagnostic system 2 contains a power supply battery so as to be portable, and the battery is preferably rechargeable as a NiCd battery or the like so that the power can be supplied even from the battery of a car through the socket of a lighter. Shirane col. 8, lines 36-44.**

Applicant further points out that the method described in Shirane operates based upon identification of a particular vehicle using a VIN number or ECU-ID of the particular vehicle. Indeed the manner in which Shirane operates is to accept user input or selection of the VIN number corresponding to a vehicle, so as to choose the correct program from among programs for many vehicles from the diagnostic system. A VIN identification, the plurality of programs associated with different vehicles, and the portability of the system, are clear teachings from Shirane that are consistent with a portable diagnostic system which is not maintained within a vehicle, and which is designed to be used with many different vehicles. For example, a portable unit designed to be used, such as by a mechanic, with many vehicles, such as the vehicles of numerous customers. These aspects described in Shirane are inconsistent with a vehicle based system. For instance, a fault diagnostic system which is vehicle based (maintained in a vehicle) would not reference a ECU-ID or VIN number to identify the vehicle and/or to select

from among many programs as in Shirane, because it is already associated with a single vehicle.

Accordingly, Shirane may not be combined with Moore (or any other reference) to produce the vehicle based system as presently recited in the Applicant's claims. Shirane describes a system which in form and operation is external to a vehicle. A combination, such as the proposed combination of Shirane and Moore, which places the diagnostics system such that it is maintained within a vehicle would render Shirane unfit for its stated and intended purpose, e.g., a portable diagnostic system used with many vehicles. Further, such a combination would change the principle of operation of Shirane. In particular, Shirane describes that the VIN number and ECU-ID are used to identify a vehicle, and select from among many programs based on identification (e.g., select from among many vehicle). However, these operating principles which are essential to the invention described in Shirane are rendered useless if the system is maintained in a particular vehicle.

Similarly, Moore is directed to a system in which the data analysis if any occurs via external devices as is clear from FIG 1 and the description beginning in column 8. External devices PDA 107 and local computer 108 are employed in Moore to analyze sensor data from a vehicle 100. Moore even indicates that these devices are connected via a wireless link 104 or dataport 102 and describes the device connecting to the vehicle using "a dataport located conveniently in the garage or outside a driver's dwelling". *Moore, col. 8, line 35-40*. Thus, it seems apparent that Moore describes devices such as a home computer which connects to the vehicle at a garage and, thus these devices cannot be said to be vehicle based. Moore fails to describe any vehicle based device is used to analyze the sensor

data. In other words, Moore is limited to a system in which the diagnostic aspects of the system if any occur via the described external devices, as in FIG. 1. A combination, such as the proposed combination of Shirane and Moore, which places the diagnostics system such that it is maintained within a vehicle would render Moore unfit for its stated and intended purpose, and/or change the principle of operation of Moore, e.g., alter the data acquisition system as in FIG. 1 in which the data is gathered via a PDA 107 or local computing device 108.

Thus, there is insufficient motivation to combine because the proposed combination of Shirane and Moore would render one or more of the references unfit for their intended purposes and/or change a principle of operation of one or more of the references. Accordingly, claim 1 is allowable over the proposed combination of Shirane and Moore for this additional reason and withdrawal of the §103 rejection is respectfully requested.

**Claims 2-11** depend directly or indirectly from claim 1 and are allowable at least based upon this dependency as well as for their own recited features which the references of record do not teach or suggest.

One or more of the arguments made above with respect to claim 1 are also applicable to independent claim 12, 23, 33 and 43 as noted in the following discussion. For example:

**Claim 12** recites a computer-readable medium having stored thereon a computer program having executable instructions for performing a process comprising:

- collecting, on a computer maintained within a vehicle, data from a plurality of systems of the vehicle; wherein the plurality of systems includes:
  - a diagnostics system providing one or more diagnostic codes;
  - and

- a global positioning satellite (GPS) system providing vehicle location data; and
- generating a deciphered explanation of at least one said vehicle diagnostics code wherein the explanation combines data collected from the diagnostic system with vehicle location data collected from the GPS system.

The proposed combination of Shirane and Moore fails to disclose the features of claim 12 for reasons discussed with respect to claim 1. For example the combination fails to disclose “generating a deciphered explanation of at least one said vehicle diagnostics code wherein the explanation combines data collected from the diagnostic system with vehicle location data collected from the GPS system”. The proposed combination of references fails to teach or suggest an explanation based on combined data.

Further, Shirane is silent on “a global positioning satellite (GPS) system”. While Moore discloses vehicle system which may include a GPS system, Moore fails to describe that the GPS data is combined with diagnostic data to generate an explanation. Thus, the combination fails to teach or suggest “wherein the explanation includes data collected by the computer from the vehicle diagnostic system and the GPS” as recited in claim 12. There is no basis in the references of records for an explanation based upon diagnostic data combined with GPS data. Shirane and Moore, alone or in combination, fail to teach or suggest these recited features of claim 12. Accordingly, claim 12 is not obvious over Shirane in view of Moore, and withdrawal of the §103 rejection is requested.

Still further, the combination of Shirane and Moore lacks motivation for reasons described with respect to claim 1, and withdrawal of the §103 rejection of claim 12 is requested for this additional reason.



Claims 13-22 depend directly or indirectly from claim 12 and are allowable at least based upon this dependency as well as for their own recited features which the references of record do not teach or suggest.

**Claim 23** recites a vehicle comprising:

- a vehicle diagnostic system;
- one or more other vehicle systems; and
- a computer communicatively coupled to the vehicle diagnostic system and the one or more other systems via respective interfaces, wherein the computer is configured to:
  - collect data from a plurality of said vehicle systems; and
  - generate a deciphered explanation of a vehicle diagnostics code.

The proposed combination of Shirane and Moore fails to disclose the features of claim 23 for reasons discussed with respect to claim 1. For example the combination fails to disclose "a vehicle comprising a computer wherein the computer is configured to: collect data from a plurality of said vehicle systems; and generate a deciphered explanation of a vehicle diagnostics code." As noted the diagnostic systems of Shirane and Moore are not vehicle based. The proposed combination of references fails to teach or suggest the deciphered explanation of a vehicle diagnostics code as recited in claim 23. Accordingly, claim 23 is not obvious over Shirane in view of Moore, and withdrawal of the §103 rejection is requested.

Further, the combination of Shirane and Moore lacks motivation for reasons described with respect to claim 1, and withdrawal of the §103 rejection of claim 23 is requested for this additional reason.

**Claims 24-32** depend directly or indirectly from claim 23 and are allowable at least based upon this dependency as well as for their own recited features which the references of record do not teach or suggest.

**Claim 33** recites a vehicle-based system comprising:

- a diagnostics receiver module receiving a vehicle diagnostics code from a vehicle diagnostics system, the vehicle diagnostics code including a set of one or more symbols and corresponding to a vehicle condition;
- one or more interfaces corresponding to one or more other vehicle systems and configured to receive vehicle systems data from a respective vehicle system; and
- means for generating an explanation of the vehicle condition based on the vehicle diagnostics code, wherein the explanation combines data from the vehicle diagnostics system and at least one said other vehicle system.

The proposed combination of Shirane and Moore fails to disclose the features of claim 33 for reasons discussed with respect to claim 1. For example the combination fails to disclose “generating an explanation of the vehicle condition based on the vehicle diagnostics code, wherein the explanation combines data from the vehicle diagnostics system and at least one said other vehicle system”. The proposed combination of references fails to teach or suggest an explanation based on combined data. As noted the diagnostic systems of Shirane and Moore are not vehicle based. Accordingly, claim 33 is not obvious over Shirane in view of Moore, and withdrawal of the §103 rejection is requested.

Further, the combination of Shirane and Moore lacks motivation for reasons described with respect to claim 1, and withdrawal of the §103 rejection of claim 33 is requested for this additional reason.

Claims 34-42 depend directly or indirectly from claim 33 and are allowable at least based upon this dependency as well as for their own recited features which the references of record do not teach or suggest.

Claim 43 recites a method comprising:

- receiving, on a vehicle based computer, a vehicle diagnostics code from a vehicle diagnostics system, the vehicle diagnostics code including a set of one or more symbols and corresponding to a vehicle condition;
- receiving vehicle systems data from one or more other vehicle systems; and
- retrieving an explanation of the vehicle condition based on the vehicle diagnostics code; wherein the explanation combines data from the vehicle diagnostics system and at least one said other vehicle system.

The proposed combination of Shirane and Moore fails to disclose the features of claim 43 for reasons discussed with respect to claim 1. For example the combination fails to disclose "explanation of the vehicle condition based on the vehicle diagnostics code; wherein the explanation combines data from the vehicle diagnostics system and at least one said other vehicle system". As noted the diagnostic systems of Shirane and Moore are not vehicle based. The proposed combination of references fails to teach or suggest an explanation based on combined data. Accordingly, claim 43 is not obvious over Shirane in view of Moore, and withdrawal of the §103 rejection is requested.

Further, the combination of Shirane and Moore lacks motivation for reasons described with respect to claim 1, and withdrawal of the §103 rejection of claim 43 is requested for this additional reason.

**Claims 44-48** depend directly or indirectly from claim 43 and are allowable at least based upon this dependency as well as for their own recited features which the references of record do not teach or suggest.

For at least the foregoing reasons, claims 1-48 are not obvious over Shirane in view of Moore, and withdrawal of the §103 rejections of these claims is respectfully requested.

2. **SECOND GROUND OF REJECTION:** Claims 3, 14, 25 and 41 meet the requirements of 35 U.S.C. §103(a) and are therefore allowable Shirane in view of U.S. Patent No. 6,212,449 to Wellman et al. (hereinafter "Wellman").

Wellman describes a "diagnosis system for materials handling vehicles leads service personnel step-by-step through diagnosis and repair of faults within the vehicle. Faults are assigned corresponding event codes so that when a fault is detected, its corresponding event code is displayed . . . The event code is used to access diagnosis information identifying the portion of the vehicle wherein the malfunction has occurred, the components which caused the malfunction and, preferably, provides a pictogram of that portion of the vehicle. *Wellman, Abstract*

However, Wellman fails to correct the defects in the combination of Shirane and Moore previously discussed with respect to claims 1, 12, 23, 33 and 43. For example, Wellman fails to teach or suggest "collecting, on a computer maintained within a vehicle, data from a plurality of systems of the vehicle" or "wherein the explanation combines data collected from the diagnostic system with data collected from at least one other system" as recited in claim 1. Claims 3, 14, 25 and 41 depend respectively from one of independent claims 1, 12, 23, 33 and

43 and are allowable at least based on this dependency. Thus, Applicant respectfully requests withdrawal of the §103 rejection of these claims.

3. **THIRD GROUND OF REJECTION:** Claims 30 and 39 meet the requirements of 35 U.S.C. §103(a) and are therefore allowable over Shirane in view of U.S. Patent No. 6,2789,19 to Hwang et al. (hereinafter "Hwang").

Hwang describes an "apparatus for diagnosing and indicating operational failure in automobiles includes a diagnostic circuit for receiving signals input through wiring at both ends of each fuse and wiring of a relay in a fuse box or junction box installed in an automobile and diagnosing operation failure by detecting a change in the logic value of the input signal, and an output device for receiving the result of diagnosis from the diagnostic circuit and outputting signals indicating the location of a defective fuse or relay. *Hwang, Abstract.*

However, Hwang fails to correct the defects in the combination of Shirane and Moore previously discussed with respect to claims 1, 12, 23, 33 and 43. For example, Hwang fails to teach or suggest an explanation "wherein the explanation combines data collected from the diagnostic system with vehicle systems vehicle location data collected from the GPS system" as recited in claim 12, or "wherein the explanation combines data from the vehicle diagnostics system and at least one said other vehicle system as recited in claim 33. Claims 30 and 39 depend respectively from one of independent claims 1, 12, 23, 33 and 43 and are allowable at least based on this dependency. Thus, Applicant respectfully requests withdrawal of the §103 rejection of these claims.

**Conclusion**

The Applicant respectfully considers this application to be in condition for allowance and respectfully requests the Board to overturn the final rejection and that the Examiner pass this application to allowance

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Respectfully Submitted,



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## CLAIMS APPENDIX

1. A method comprising:  
collecting, on a computer maintained within a vehicle, data from a plurality of systems of the vehicle, wherein the plurality of systems:  
include a diagnostics system providing one or more diagnostic codes; and  
each is connected to the computer by a respective interface; and  
generating, on the computer, an explanation of a vehicle condition based on at least one said vehicle diagnostics code comprising a set of symbols, wherein the explanation combines data collected from the diagnostic system with data collected from at least one other system.
2. A method as recited in claim 1 wherein the generating operation comprises retrieving a textual explanation of the vehicle diagnostics code.
3. A method as recited in claim 1 wherein the generating operation comprises retrieving a graphical illustration of a component associated with the vehicle diagnostics code.
4. A method as recited in claim 1 further comprising generating supplemental information related to the vehicle diagnostics code.

5. A method as recited in claim 4 wherein the generating supplemental information operation comprises retrieving an estimated price for repairing a condition related to the vehicle diagnostics code.

6. A method as recited in claim 4 wherein the generating supplemental information operation comprises retrieving a location of a vehicle dealership.

7. A method as recited in claim 1 further comprising presenting the explanation at a client computer.

8. A method as recited in claim 7 wherein the presenting operation comprises presenting the explanation at a local, vehicle-based client.

9. A method as recited in claim 7 wherein the presenting operation comprises presenting the explanation at a remote client.

10. A method as recited in claim 1 further comprising storing an updated explanation of the vehicle condition in a memory.

11. A method as recited in claim 1 further comprising transmitting the vehicle diagnostics code to a remote computer.



12. A computer-readable medium having stored thereon a computer program having executable instructions for performing a process comprising:

collecting, on a computer maintained within a vehicle, data from a plurality of systems of the vehicle; wherein the plurality of systems includes:

a diagnostics system providing one or more diagnostic codes; and

a global positioning satellite (GPS) system providing vehicle location data; and

generating a deciphered explanation of at least one said vehicle diagnostics code, wherein the explanation combines data collected from the diagnostics system with vehicle location data collected from the GPS system.

13. A computer-readable medium as recited in claim 12 wherein the generating operation comprises generating a textual explanation of the vehicle diagnostics code.

14. A computer-readable medium as recited in claim 12 wherein the generating operation comprises generating a graphical illustration of a component associated with the vehicle diagnostics code.

15. A computer-readable medium as recited in claim 12, the process further comprising generating supplemental information related to the vehicle diagnostics code.

16. A computer-readable medium as recited in claim 15 wherein the generating supplemental information operation comprises generating an estimated price for repairing a condition related to the vehicle diagnostics code.

17. A computer-readable medium as recited in claim 15 wherein the generating supplemental information operation comprises generating a location of a vehicle dealership.

18. A computer-readable medium as recited in claim 12, the process further comprising presenting the deciphered explanation at a client computer.

19. A computer-readable medium as recited in claim 18 wherein the presenting operation comprises presenting the deciphered explanation at a local, vehicle-based client

20. A computer-readable medium as recited in claim 18 wherein the presenting operation comprises presenting the deciphered explanation at a remote client.

21. A computer-readable medium as recited in claim 12, the process further comprising updating the deciphered explanation of the vehicle diagnostics code.

22. A computer-readable medium as recited in claim 12, the process further comprising:

transmitting the vehicle diagnostics code to a remote computer;  
looking up the deciphered explanation in an explanations store in operable communication with the remote computer, the explanations store having one or more explanations associated with one or more associated diagnostics codes.

23. A vehicle comprising:  
a vehicle diagnostic system;  
one or more other vehicle systems; and  
a computer communicatively coupled to the vehicle diagnostic system and the one or more other systems via respective interfaces, wherein the computer is configured to:

collect data from a plurality of said vehicle systems; and  
generate a deciphered explanation of a vehicle diagnostics code.

24. A vehicle as recited in claim 23, wherein the deciphered explanation comprises a textual explanation of the vehicle diagnostics code.

25. A vehicle as recited in claim 23, wherein the deciphered explanation comprises a graphical illustration of a component associated with the vehicle diagnostics code.

26. A vehicle as recited in claim 23, wherein the computer is further operable to generate supplemental information related to the vehicle diagnostics code.

27. A vehicle as recited in claim 26, wherein the supplemental information comprises an estimated price for repairing a condition related to the vehicle diagnostics code.

28. A vehicle as recited in claim 26 wherein the supplemental information comprises a location of a vehicle dealership.

29. A vehicle as recited in claim 23 further comprising a display device presenting the deciphered explanation.

30. A vehicle as recited in claim 23, further comprising an audio output device presenting an audio version of the deciphered explanation.

31. A vehicle as recited in claim 29, wherein the computer transmits the deciphered explanation to a remote client computer for presentation at the remote client.

32. A vehicle as recited in claim 23, wherein the computer comprises an updateable repository of one or more deciphered explanations associated with one or more vehicle diagnostics codes.

33. A vehicle-based system comprising:

a diagnostics receiver module receiving a vehicle diagnostics code from a vehicle diagnostics system, the vehicle diagnostics code including a set of one or more symbols and corresponding to a vehicle condition;

one or more interfaces corresponding to one or more other vehicle systems and configured to receive vehicle systems data from a respective vehicle system; and

means for generating an explanation of the vehicle condition based on the vehicle diagnostics code, wherein the explanation combines data received from the vehicle diagnostics system and at least one said other vehicle system.

34. A vehicle-based system as recited in claim 33 wherein the means for generating comprises a computer-readable memory storing a diagnostics information registry having a field storing a reference to the explanation.

35. A vehicle-based system as recited in claim 33 wherein the means for generating comprises a memory storing explanations of one or more predetermined vehicle diagnostics codes.

36. A vehicle-based system as recited in claim 35 wherein the memory stores one or more of a graphical explanation, a textual explanation, and an audio explanation.

37. A vehicle-based system as recited in claim 33 further comprising a network communications module communicating the explanation over a network.

38. A vehicle-based system as recited in claim 33 further comprising a media output device presenting the explanation.

39. A vehicle-based system as recited in claim 38 wherein the media output device comprises audio speakers outputting an audio explanation.

40. A vehicle-based system as recited in claim 34 further comprising an update module updating information in the diagnostics information registry.

41. A vehicle-based system as recited in claim 34 wherein the diagnostics information registry comprises:

- a severity field storing a severity level associated with the vehicle condition;

- a component field storing a component identifier associated with the vehicle condition;

- a type field storing a diagnostics code type associated with the vehicle diagnostics code;

- an automatic field storing an indicator indicating whether to automatically present the explanation;

- an graphics field storing an indicator indicating whether to present graphics data included in the explanation.

42. A vehicle-based system as recited in claim 33 wherein the vehicle diagnostics code is an onboard diagnostics II (OBDII) code.

43. A method comprising:

receiving, on a vehicle based computer, a vehicle diagnostics code from a vehicle diagnostics system, the vehicle diagnostics code including a set of one or more symbols and corresponding to a vehicle condition;

receiving vehicle systems data from one or more other vehicle systems; and

retrieving an explanation of the vehicle condition based on the vehicle diagnostics code; wherein the explanation combines data from the vehicle diagnostics system and at least one said other vehicle system.

44. A method as recited in claim 43 wherein the retrieving operation comprises accessing a memory location storing an updateable explanation.

45. A method as recited in claim 44 further comprising updating the explanation.

46. A method as recited in claim 43 further comprising presenting the explanation automatically in response to receiving the vehicle diagnostics code.

47. A method as recited in claim 43 further comprising presenting the explanation in response to a request from a user.

48. A method as recited in claim 43 further comprising communicating the explanation over a network.

## EVIDENCE APPENDIX

None.



## RELATED PROCEEDINGS APPENDIX

None.